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The Rates and Cost of Childhood Immunization in Cameroon

A recent survey in Cameroon by Waters et al investigates the associations between household-level and provider-level determinants of vaccination rates and calculates the cost of childhood immunizations.

In Cameroon, both government as well as donors support a national Expanded Program on Immunization, which has been ongoing since 1981. However, immunization rates have been relatively low despite the targeted coverage rates of 80%. In 2000 it was found that only 34% of children were immunized fully.

Methods

The study team used data from the 1998 Cameroon Demographic Health Survey as well as the 2000 Multiple Indicator Cluster Survey (MICS) to construct quintiles of household economic status using principal components analysis to create an asset index. Assets in this index included ownership of TVs, radios, as well as access to services such as water and electricity. In addition, they surveyed 80 health facilities in 51 districts, which were chosen from the same clusters used in the 1998 and 2000 surveys. Data on expenditures was also obtained from the Ministry of Health (MOH) and donors and NGOs involved in the EPI program. Complete immunization was defined as a child's having received all of the immunizations in the Cameroon National EPI immunization schedule. Immunization status was obtained from the 1998 and 2000 surveys. Multivariate logistic regression analysis was used to measure the relationships between the different levels of determinants (individual, health, facility, and district) and the child's immunization status.

Results

The survey team calculated that the EPI program costs \$9 million annually, with 36% of this from the MOH. World Health Organization (WHO), UNICEF, JICA, GTZ and Rotary International were some of the international organizations mentioned who contributed to these costs. The team also estimated that the cost of routine immunization, not including the cost of immunization campaigns, is \$12.73 per child per year in Cameroon. Seventy seven percent (77%) of children whose mothers had finished secondary education had been fully immunized, compared to only 53% of those whose mothers had not completed primary school. The survey found that both socio-economic status and maternal education status were predictors of immunization rates; however, maternal education was a stronger predictor than socio-economic status. In addition it was found that at the health facility level, having an immunization plan and a supervisory visit from district levels all contributed to greater immunization rates.

Conclusion and discussion

The strong effect of households' socio-economic status and particularly women's education on child immunization rates underscores the need to invest resources in low income and poorly educated communities, to encourage them to have their children immunized. In addition, the authors assert that the fact that having supervisory visits and immunization work plans were predictors of immunization levels points to the importance of health systems management in ensuring effective service delivery. As vitamin A supplementation is associated closely with routine immunization, the findings of this survey can be used to improve coverage rates for routine vitamin A supplementation. The findings of this survey also highlight the need to continue investing in girls' education to ensure the health and well-being of future generations. It would be interesting to analyze what determinants affect participation in, and coverage rates of, immunization campaigns as Cameroon in order to compare the cost effectiveness and efficaciousness of this approach versus the EPI approach.